

# Prevalence of Sleep Problems in Children with Neurodevelopmental Disorders Referred to a Sleep Clinic

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## Aim

This study aims to explore the relationship between sleep hygiene and quality of life in children with neurodevelopmental disabilities who were referred to a sleep clinic.

## Background

- Sleep disturbances in children have been associated with many negative outcomes including increases in child-reported depressive and anxiety symptoms, poorer self-esteem, increases in social difficulties, and increases in school-related difficulties.
- Approximately 25% to 40% of children and adolescents experience sleep problems (Owens 2005).
- Rates of sleep disturbances in children with developmental disorders is higher than rates reported for typically developing children, with some studies suggesting rates of sleep problems as high as 83% (Richdale, 1999).
- Wiggs (2000) suggested that families of children with developmental disorders often do not seek treatment due to previously unsuccessful experiences with treatment or belief that sleep difficulties are inevitable given their child's diagnosis.

## Methods

Children aged 4 to 15 years with a neurodevelopmental disorder were recruited from a sleep clinic for this study. Parents were asked to complete the parent form of the Children's Report of Sleep Patterns (CRSP) and the Pediatric Quality of Life Inventory (PedsQL). We examined parent reported child sleep habits and parent reported quality of life.

## Methods & Measures

- **Children's Report of Sleep Patterns:** Parent report measure of typical sleep hygiene
- **Pediatric Quality of Life Inventory:** 23 item parent report measure of physical and psychosocial

## Participants

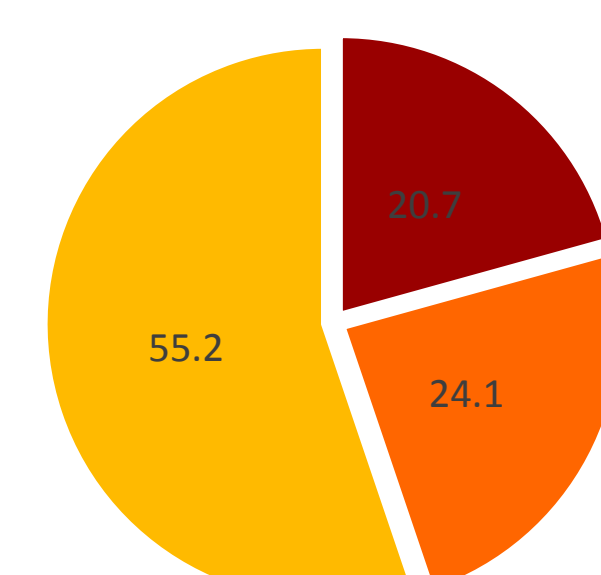
**Table 1. Participant Characteristics**

Age (SD) years	9.86 (3.37)
Gender (% Male)	65.5%
Race (% Caucasian)	51.7%

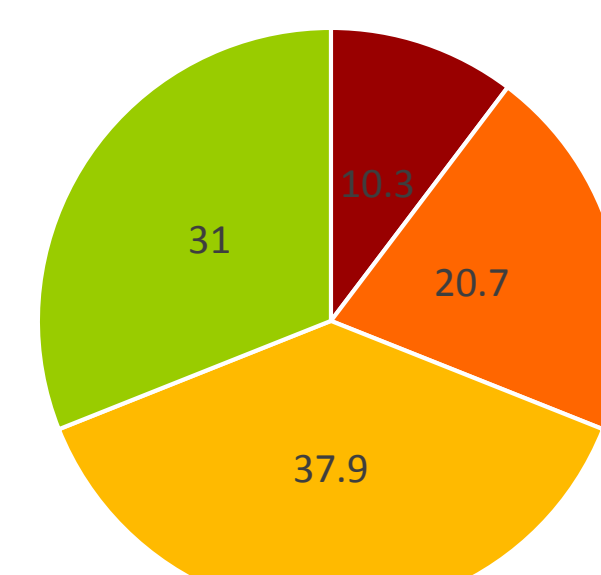
## Results

31% of parents reported their children to be either a good or great sleeper, 68.9% reported that their child has sleep difficulties. Similarly, 24.1% of parents reported that their child got the right amount of sleep most nights, while 55.2% reported their child did not get enough sleep. In terms of sleep hygiene, 20.69% of parents reported that their child usually or always consumes caffeinated beverages. 48.27% of parents reported that their child usually or always either falls asleep or wakes up in a location other than the child's bed, and 27.5% of parents reported that usually or always their child both falls asleep and wakes up in a location other than the child's bed. 79.31% of parents reported that their child usually or always engages in stimulating activities in the hour before bed (e.g. watching TV, playing videos games, etc.). There was a significant relationship between the CRSP sleep location index and the CRSP sleepiness scale ( $r = .486, p < .01$ ), such that falling asleep or waking more often in a location other than the child's own bed related to greater parent reported sleepiness. Similarly, there was a significant relationship between electronic use at sleep onset and the sleepiness scale ( $r = .457, p < .05$ ), such that greater use of electronics was related to greater parent reported sleepiness. There was a significant relation between the CRSP sleep location index and the PedsQL total score ( $r = -.483, p < .01$ ), such that falling asleep or waking more often in a location other than the child's own bed related to poorer overall quality of life.

CRSP Parent Report of Sleep



CRSP "Do you consider your child to be..."

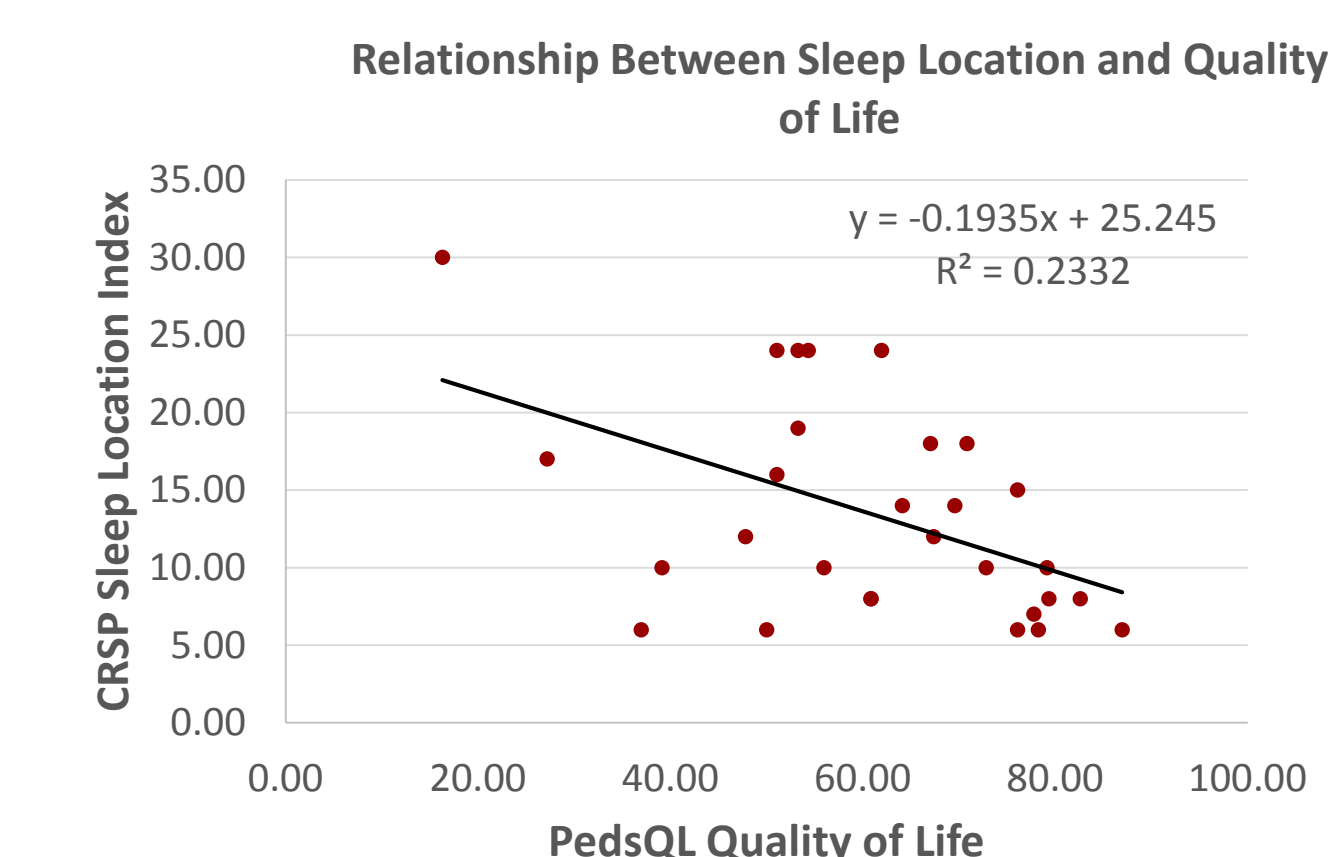
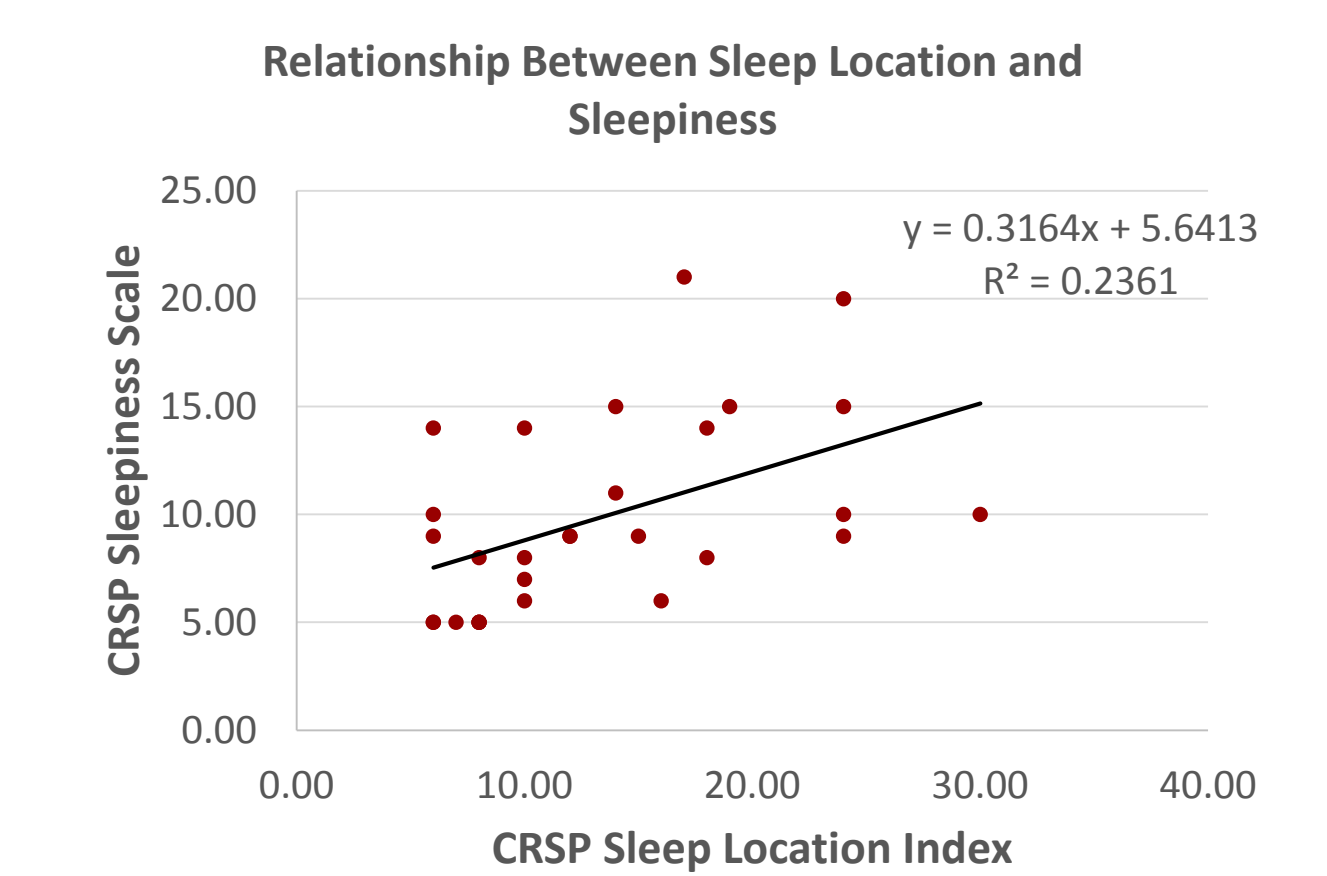
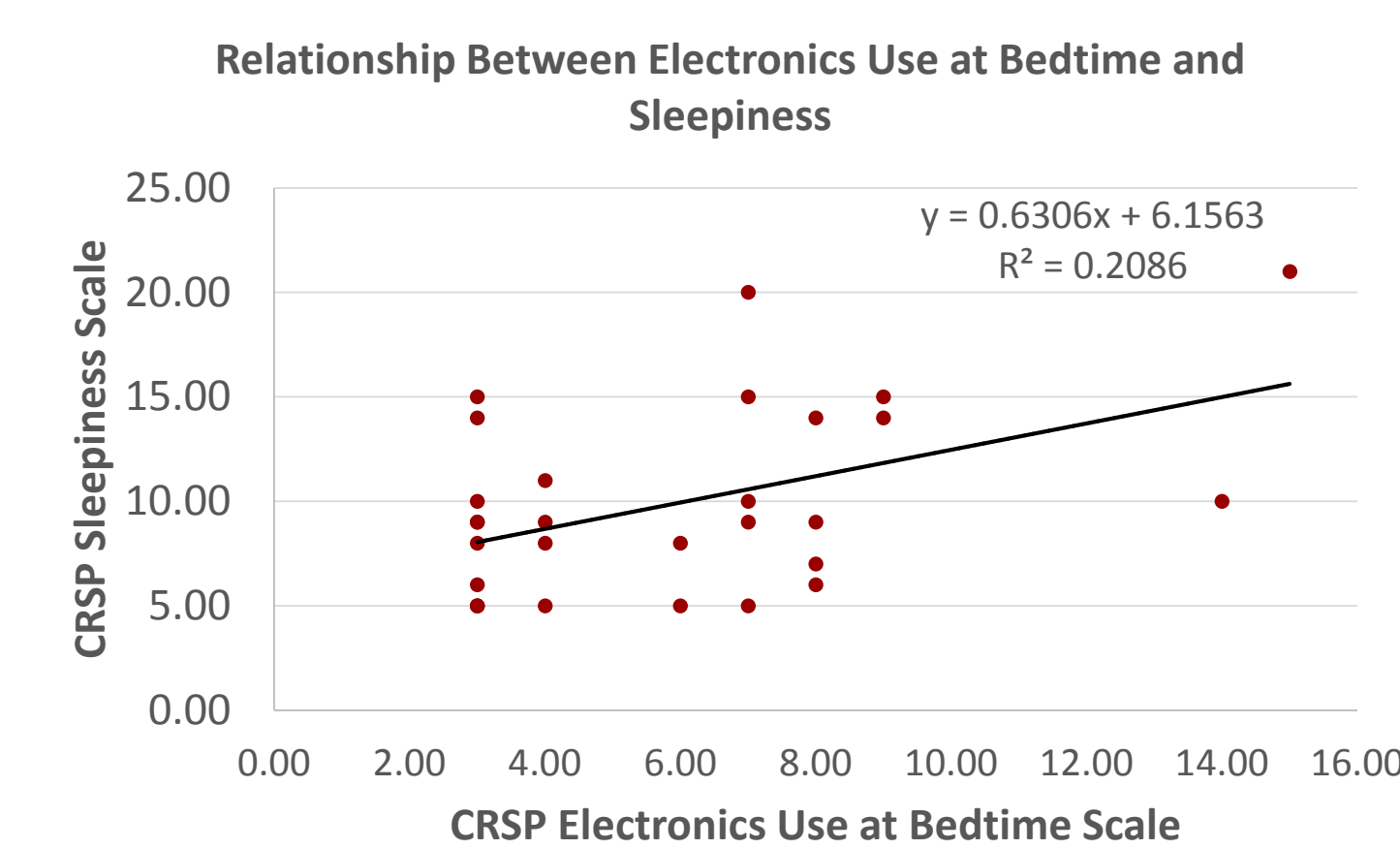


■ Too much sleep ■ Right amount of sleep ■ Too little sleep ■ Great Sleeper ■ Good Sleeper ■ Okay Sleeper ■ Poor Sleeper

**Table 3:**

	CRSP Sleepiness Scale	CRSP Sleep Location Index	CRSP Electronics Use Before Bed	PedsQL Quality of Life
CRSP Sleepiness Scale	1	0.486**	0.457*	-4.74**
CRSP Sleep Location Index		1	0.467*	-0.483**
CRSP Electronics Use Before Bed			1	-0.361
PedsQL Quality of Life				1

\*Correlation significant at the  $p < .05$  level (2 tailed).  
\*\*Correlation significant at the  $p < .01$  level (2 tailed).



## Conclusions

Results indicate that parent perception of sleep problems in children with developmental disabilities is prevalent, consistent with previous literature (Wiggs 2001). Parents consistently reported that their child had poor sleep hygiene habits. Many of these poor sleep hygiene habits were related to poorer quality of life, most notably falling asleep or waking up in a location other than the child's own bed was related to poorer overall quality of life. Sleep hygiene represents an important avenue of intervention in this population.

## Summary and Implications

Children with neurodevelopmental disorders were consistently reported to have poor sleep hygiene. Many of these sleep hygiene habits were negatively correlated with QoL. This study provides support for the interventions targeting sleep hygiene to improve sleep behaviors in this population.